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ABSTRACT

College course placement systems match students with instruction that is appropriate to their academic preparation and other characteristics. At a minimum, course placement involves assessing students' academic skills and providing them with instruction that is appropriate to their skills. Upon entry to college, students might encounter different types of course placement: remedial course placement; advanced, honors or accelerated course placement; credit by examination; or English as a second language placement. Remedial course placement is perhaps the most common type and affects a relatively large number of entering college students. Remedial course placement is the focus of this chapter. After brief discussions of the other three types of placement, the authors discuss the characteristics of remedial course placement systems, currently debated issues concerning remedial instruction, the types of measures, and technical issues. (Contains 33 references.) (GCP)

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Assessment and College Course Placement: Matching Students With Appropriate Instruction

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Chapter 21
Assessment and College Course Placement
Matching Students with Appropriate Instruction

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College course placement systems match students with instruction that is appropriate to their academic preparation and other characteristics. For example, students whose scores on a mathematics placement test suggest that their academic skills are not sufficiently developed for them to succeed in a standard freshman mathematics course (e.g., college algebra) might be advised or required to enroll in a lower level mathematics course (e.g., elementary algebra).

At a minimum, course placement involves assessing students' academic skills and providing them with instruction that is appropriate to their skills. Student advising is also an important factor in the course placement process because students' academic success can be considerably affected by their nonacademic characteristics. For example, consider a student who cares for a child, works 40 hours per week, and is taking courses for a particular occupational goal. Another student who has the same placement test scores but has no dependents, is supported by her or his parents, and has no particular occupational goals may be advised to take different courses. College advisers are in the best position to observe these noncognitive characteristics, to interpret them, and to give appropriate advice to students.

Types of Course Placement

Course placement systems in different institutions vary in structure, in the assessments that are used, and in the assignment of course credit. Counselors should encourage students to visit the websites of institutions of interest to obtain detailed information about specific course placement procedures and policies.

Upon entry to college, students might encounter different types of course placement: remedial course placement; advanced, honors or

accelerated course placement; credit by examination; or English as a second language (ESL) placement. Remedial course placement is perhaps the most common type and affects a relatively large number of entering college students. It is also the focus of much political debate. As such, remedial course placement is the primary focus of this chapter. After brief discussion of the other three types of placement, we discuss the characteristics of remedial course placement systems, currently debated issues concerning remedial instruction, the types of measures used, and technical issues.

Remedial Course Placement

Identifying and providing appropriate instruction for students who are not academically prepared to take traditional first-year courses in college are particularly important today. Policymakers, the press, and the general public usually label college courses provided to academically underprepared students as remedial. In contrast, educators refer to them as developmental, particularly when the courses are based on developmental theory. Following common practice, we use the term *remedial* in this chapter. Of course, what constitutes remedial, standard, and advanced varies from institution to institution.

According to a survey by the American Association of Community Colleges (AACC; Shults, 2000), two-year colleges typically offer four or more levels of remedial mathematics, two levels of remedial reading, two levels of remedial writing, and one level of remedial science. About 95 percent of two-year institutions offer remedial mathematics, reading, and writing. Less than 50 percent of two-year institutions offer remedial science.

Although most institutions and states do not allow students to obtain degree credit for remedial coursework (McCabe, 2000; Shults, 2000), most two- and four-year colleges allow students to take college-level courses concurrently with remedial coursework (NCES, 1996; Shults, 2000). Policies related to taking degree or certificate courses concurrently with remedial coursework vary from institution to institution, so college-bound students need to obtain pertinent information from their preferred institutions (NCES, 1996).

There is little information available about institutional policies related to students' taking remedial and standard-level coursework in the same subject area at the same time. Anecdotal evidence indicates that this practice typically does not occur with English and mathematics courses; however, students are frequently allowed to take remedial reading courses while taking reading-intensive courses such as history,

psychology, and other humanities courses.

Advanced, Accelerated, or Honors Course Placement

Successful Advanced Placement (AP) Examination scores in high school (typically scores of 4 or 5) usually permit students to obtain college course credit in tested subject areas, or to achieve advanced course placement in those subject areas in college (College Board, 2001a; College Entrance Examination Board, 1980). Advanced college courses typically parallel standard-level college courses in subject matter but present these subjects at a higher level. Institutions vary in their use of AP scores for course placement.

Credit by Examination

College-Level Examination Program (CLEP) tests and the Excelsior College Examinations (formerly Regents College Examinations) are used to award college credit for prior learning, as well as for advanced course placement (College Board, 2001b; Excelsior College, 2001). More than 2,900 colleges and universities award credit for satisfactory CLEP scores. See the CLEP website (www.collegeboard.com/clep) or the Excelsior College Examinations website (www.excelsior.edu/exams/xms_indx.htm) for more information.

English as a Second Language (ESL) Course Placement

ESL course placement is intended to guide non-native English speakers into courses to improve their English reading and writing skills. About 50 percent of postsecondary institutions offer ESL courses (NCES, 1996; Shults, 2000). Placement into ESL courses is similar in structure to remedial course placement; however, less than 40 percent of postsecondary institutions consider ESL courses as part of their remedial education program (NCES, 1998).

Current Status of Remedial Education

In 1994, *Education Week* reported that postsecondary remedial instruction had increased from being offered in 81 percent of all four-year institutions in 1985–1986 to 90 percent in 1993–1994, and from 85 percent of all two-year institutions to 93 percent during the same time period. A more recent NCES study (Korb, 1999) reported that 99 percent of two-year institutions, 85 percent of public four-year institutions, and 63 to 68 percent of four-year private for-profit and

nonprofit institutions offer remedial programs.

A significant percentage of college students are involved in remedial coursework, according to the standards of the institutions in which they are enrolled. McCabe (2000) found that 41 percent of entering community college students and 29 percent of entering four-year college students are underprepared in at least one of the basic skills areas. This means more than one million underprepared students are entering college and enrolling in remedial programs. According to Saxon and Boylan (as cited in McCabe, 2000), 20 percent of entering students are underprepared in reading, 25 percent are underprepared in writing, and 34 percent are underprepared in mathematics. In 1998, 64 percent of students entering the California state college system failed the entry-level mathematics test, and 43 percent failed the verbal test (Estrich, 1998). All these students were in the top one-third of their graduating classes.

Postsecondary institutions and states are closely scrutinizing the costs and benefits of remedial instruction. Estimates of the cost of providing remedial instruction in the United States range from about one billion dollars—roughly 1 percent of all public expenditures for postsecondary education (Phipps, 1998)—to three or more times this amount (Costrell, 1998). Some authors deplore the consequences of remedial instruction in college. They believe that it corrupts the curriculum, demoralizes faculty, and acquiesces to low standards in high school (Costrell, 1998). Phipps (1998), on the other hand, argues for the social benefits of remedial instruction: increased tax revenues, greater economic productivity, reduced crime rates, and increased quality of civic life.

Two results of this scrutiny are discernable. First, some states have given responsibility for remedial instruction to two-year colleges and have entirely removed remedial course placement from four-year institutions. Second, some institutions have outsourced remedial instruction to private organizations (including for-profit organizations).

Remedial Education: Whose Responsibility?

Some assert that because remedial education is not college-level instruction, four-year institutions should not provide it (Ignash, 1997). In 1998 the City University of New York (CUNY) system proposed that admission to four-year institutions be withdrawn from students who failed to pass the placement tests, and that these students be directed to community colleges (Kirst, 1998). This policy is now in effect. California and Georgia have instituted similar policies (Hebel, 1999; Hoff, 1998).

Outsourcing Remedial Instruction

Recently postsecondary institutions have expressed interest in outsourcing remedial instruction to private agencies. Three outsourcing options are to contract out remedial services to off-campus private providers or to on-campus private providers, or to use faculty to provide remedial services developed by a vendor. Kaplan Educational Centers and Sylvan Learning Centers both provide remedial services; colleges from several states are considering hiring these businesses to provide remedial instruction (Gose, 1997). Current research is inconclusive, however, about the relative merits of outsourcing remedial education over providing it on local campuses (Phipps, 1998).

For college-bound students who are interested in attending particular institutions, the best sources of information about local remedial education policies are institutional websites. Depending on state or institutional policies, some students' first-choice institution may not be an option if they are underprepared in reading, writing, or mathematics.

Other Course Placement Issues

Students and counselors need to be aware of two additional issues related to course placement systems: mandatory versus voluntary course placement, and time limits on remedial coursework. Both have implications for the length of time students take to complete their educational programs.

Mandatory versus voluntary course placement. Some institutions require students to follow placement recommendations for remedial coursework, whereas other institutions allow students some choice in the decision. In the latter situation, students should consult with academic advisers who can provide detailed information about the courses under consideration. Either way, students need to consider the implications on their educational and career plans of taking remedial coursework.

Time limits on remedial coursework. In the interest of reducing the quantity of remedial education programs, states and institutions are moving toward limiting the amount of remedial coursework students can take. According to an AACC survey (Shults, 2000), 23 percent of community colleges use various means to limit the number of remedial courses taken, such as raising tuition after multiple attempts to complete a remedial course successfully.

Measuring Students' Readiness for College-Level Work

Several measures are used to estimate students' readiness for college-level work. Among community colleges, for example, common measures include college admissions tests, high school GPA, commercially developed placement tests, AP Examinations, institutionally developed tests, and state-developed tests (Shults, 2000). Other, more subjective, approaches for identifying students who require remedial coursework include faculty or staff referral, and student self-referral (NCES, 1996).

Placement Test Scores and High School Grades

About 60 percent of postsecondary institutions administer placement tests (either commercially or institutionally developed) to all their entering students (NCES, 1996). Hills, Hirsch, and Subhiyah (1990) describe how the wide use of placement tests is a result, in part, of the measurement quality they can provide. Placement tests are, in many instances, objective measures, and the degree of imprecision (i.e., measurement error) of their scores can be estimated fairly accurately. In addition, test scores can be made equivalent across alternate forms of a test to prevent problems with variability in meaning.

Grades, in comparison, are subjective measures whose degree of imprecision is difficult to estimate. They seem efficient for placement decisions because they directly measure, at least in principle, the types of academic skills necessary for successful performance in college (Hills et al., 1990). Course quality and content vary among high schools, however, and grades can vary in meaning from school to school because of differing curricular frameworks and grade reporting procedures. Moreover, students who eventually decide to attend postsecondary institutions may not take college-preparatory courses in high school and, therefore, may not have the corresponding course grades (Hills et al., 1990).

Using multiple measures to determine students' preparedness for college significantly increases placement accuracy (ACT, 1997; Gordon, 1999; Roueche & Roueche, 1999). For example, test scores and high school grades may be used jointly to identify students who are ready for college-level work.

Computer-Based Placement Testing

Traditionally, placement tests have been administered in paper-and-pencil formats, but computerized administration methods are

becoming more common. For example, 63 percent of community colleges report using computerized placement testing (Shults, 2000). Items from a paper-and-pencil placement test may be administered via a computer (*computer-based testing*), or a computer-administered placement test may be tailored during administration according to a student's ability level (*computerized adaptive testing*). Computerized adaptive placement testing has several advantages over paper-and-pencil testing, including reduced testing time (by up to 50 percent), quick reporting of results, increased security of test items, adaptation to a wide range of student abilities, reduced proctoring, and flexibility in testing schedules (Smittle, 1994). Some students, however, may not be familiar with computers, and some institutions may have difficulty acquiring the necessary computer hardware (Shermis, Wolting, & Lombard, 1996).

Testing in High School Versus in College

Placement testing may occur in high school or in college, depending on state and institutional policies. Hills et al. (1990) noted that placement testing in high school appeals to postsecondary institutions because it lessens the demands placed on students during the first few weeks of college. College placement testing, in comparison, appeals to high schools because they avoid testing large numbers of high school students who may not even attend college. (Note that some tests that are used for placement, such as the Texas Academic Skills Program [TASP], are administered either in high school or in college.) To ensure students meet appropriate course placement requirements, they need to refer to information provided by particular postsecondary institutions of interest. Counselors and students can also refer to testing program websites for additional information.

Placement Testing in High School

Several placement test options are available to high school students. For example, students may take the ACT Assessment, AP Examinations, the SAT I, or the SAT II, all of which are used in college course placement programs (Hills et al., 1990; NCES, 1996). Note that a student may take more than one of these tests in high school; for example, he or she could choose to take the ACT Assessment and one or more AP Examinations. For a complete discussion of the ACT Assessment, the SAT I, and the SAT II, see chapter 20 on college admissions testing and see the websites of these programs:

ACT Assessment: http://www.act.org
AP Examinations: http://apcentral.collegeboard.com/program/
SAT I and SAT II: http://www.collegeboard.com/

State-developed tests, such as those in the following list, are also administered in high school and are being considered for use in course placement decisions.

Texas: TASP, www.tasp.nesinc.com/fac_sec1.htm
Kentucky: Commonwealth Accountability Testing System (CATS), www.kentuckyschools.net/KDE Administrative+Resources/Testing+and+Reporting+/CATS/default.htm
California: Golden State Examinations (GSE), www.cde.ca.gov/statetests/gse/index.html

Placement Testing in College

Colleges may use any of several commercially developed placement tests. Institutions sometimes also administer the ACT and the SAT I (and, at some institutions, the SAT II) on campus to enrolled college students. The following are three commonly used commercially developed placement tests:

ACCUPLACER (Internet-delivered, computerized adaptive system): www.collegeboard.com/highered/apr/accu/accu.html
ASSET (two-year college advising, placement, and retention system): www.act.org/asset/
COMPASS (computerized adaptive placement and diagnostic system): www.act.org/compass/index.html

Institutions may also choose to develop their own local placement tests to administer to entering students, particularly if in reviewing commercially developed placement tests, postsecondary faculty and staff decide that the tests do not adequately reflect the content of certain courses. Examples of institutionally developed test types include multiple-choice tests (see, e.g., McFate & Olmstead, 1999), performance measures (see, e.g., Bachman, Lynch, & Mason, 1995), writing samples that supplement multiple-choice placement tests (see, e.g., Galbato & Markus, 1995), and Internet-delivered, computerized adaptive tests (see, e.g., Shermis, Mzumara, Brown, & Lillig, 1997).

Technical Issues

In this section, we discuss three technical issues: How do colleges set their cutoff scores on placement tests? How can post-testing be used to improve students' academic success? How do colleges evaluate their course placement systems?

Cutoff Scores

A cutoff score on a placement test is the minimum score students must achieve in order to be advised or permitted to enroll in a particular course. Students who score lower than the cutoff on the placement test are advised or required to enroll in a lower level (e.g., remedial) course. Cutoff scores can be set in several ways: through expert (faculty) judgment, by using norms, by using predictions of success, or on the advice of the test publisher.

Expert judgment requires review of course prerequisites and the items on the placement test. First, faculty members at the institution using the test must specify in detail the minimum knowledge and skills that students need in order to learn course material. Faculty members then review the placement test to determine which score corresponds to a minimal level of preparation to take the course.

Norms (local or national) indicate how many students score at or below particular score levels. Faculty at an institution may know from past experience that a certain rough percentage of their students are prepared to take a particular course. By matching this percentage to the norms, an institution can determine a cutoff score. An institution may also use norms to allocate students to courses based on available resources, such as faculty members or classrooms that are available.

Prediction methods for setting cutoff scores are based on statistical analyses of the relationship between test scores and grades in a course. A statistical model can be developed that shows, for any score on the placement test, a student's chances of success (i.e., completing the course with a given grade or higher). The model also provides evidence of the *predictive validity* of a test for course placement: Higher scores should correspond to higher chances of success. The model can further be used to estimate accuracy rates for different potential cutoff scores. An *accuracy rate* is the proportion of students for whom a correct placement decision is made (Sawyer, 1996).

Test publishers may recommend cutoff scores for particular types of courses (see, e.g., ACT, 2000). These recommendations are useful when

an institution has no previous experience with or data on a test but needs to set a cutoff score. The institution should follow up, as soon as is practicable, with its own validity research to adjust the score recommended by the publisher.

Knowing how a cutoff score was set will give students and their advisers a better understanding of placement test scores and a sound basis for making decisions about which courses to take.

Post-testing

A principal reason for providing remedial instruction is to give students an opportunity to acquire the academic skills they need in order to succeed in higher level courses. Institutions vary in their policies about verifying whether individual students do, in fact, achieve this goal. Some institutions require students to retake the placement test (known as *post-testing*). If students have acquired the necessary knowledge and skills, then the test scores they obtain at the end of the remedial course should exceed the scores they obtained at the beginning of the course. Students may be required to meet or exceed the cutoff scores on their post-tests before they are permitted to enroll in higher level courses.

Before deciding to enroll in a particular institution, students need to ask about the institution's post-testing policy. If post-testing is mandatory, and if meeting or exceeding a cutoff is required, then students will want to know their chances of doing so.

Evaluating Course Placement Systems

Before a course placement system can be designed and implemented at an institution, administrators and faculty must decide to allocate resources to the various components of the system. The resulting decisions are often difficult because the required resources may be substantial and could be allocated to other worthy programs or projects. It is therefore important that institutions evaluate the costs and benefits of their course placement systems.

Administrators and faculty should consider two primary questions when evaluating a system:

Correct identification. Are students placed in the correct courses? The accuracy rate and other predictive validity statistics (see previous discussion about cutoff scores) provide useful information about correct identification.

Effectiveness of low-level courses. Are students who are placed in

low-level courses actually benefiting from taking them? There are two general methods for documenting the effectiveness of instruction in low-level courses.

1. Post-testing: Effectiveness of the low-level course can be assessed by the proportion of students whose post-test scores exceed the cutoff, and by the average score gain from initial placement testing to post-testing (Sawyer & Schiel, 2000).
2. Collecting follow-up data on students as they take regular college-level courses: With such data, one can relate students' initial placement test scores to the chances of their eventual success in the college-level courses. By comparing chances of success of students who took a low-level course with those who did not take the low-level course, one can estimate the benefit of taking the low-level course for students with any given placement test score.

Other important considerations when evaluating course placement systems include noncognitive characteristics and the costs and benefits of course placement. Administrative data (e.g., the number of students who are tested, exempted from testing, or who file appeals of placement decisions), or data on student or faculty affective characteristics (e.g., do students believe the advice they have been given is appropriate?) can, when monitored over time, signal changes in how well the system is working. Using standardized survey forms, administrators can also compare their students' opinions to those of students at similar institutions. (A variety of survey forms are available through Evaluation Survey Services: www.act.org/ess/index.html.)

Murtuza and Ketkar (1995) studied a course placement and advising program at an urban university for the program's effect on retention and for its cost-effectiveness. They found that the program was cost-effective (the extra tuition resulting from higher retention rates offset the cost of the program), but their analysis of data from only recent years produced an inconclusive result. They also found that a centralized program (in which staff were hired and assigned to work specifically on course placement and advising) was more cost-effective than a decentralized program (in which these functions were assigned as additional duties to faculty members).

Summary

College course placement, particularly remedial course placement, pervades postsecondary education. State and institutional policies will continue to dictate how and where remedial programs are provided to students, and the standards students are required to meet when enrolling in particular institutions. Counselors of potential college students need to be aware of these issues and their implications for students' postsecondary plans. Depending on the student and his or her level of educational achievement, such policies and standards may dictate the type of institution in which the student *can* enroll (e.g., two- or four-year), and the length of time necessary for the student to complete his or her postsecondary educational goal.

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